

## EXECUTIVE SUMMARY

# South Dade Managed Lanes Study

Prepared for



Miami-Dade County  
Metropolitan Planning Organization

Prepared by



Kimley-Horn  
and Associates, Inc.

Fort Lauderdale, Florida



## OBJECTIVE AND CONCEPT

The objective of the *South Dade Managed Lanes Study* is to assess the feasibility of managed lanes concepts in the right-of-way for the South Dade Busway and to evaluate the revenue generating potential for improving the corridor. The concept for managed lanes in the South Dade Busway corridor involves (1) enhancing the existing level of transit service in the corridor and (2) allowing tolled private vehicles to use excess capacity in the corridor with congestion pricing to maintain a high level of service in the corridor. The managed lanes would allow reliable travel to tolled private vehicles to by-pass areas of severe traffic congestion along U.S. 1.

The South Dade Busway parallels U.S. 1 (South Dixie Highway) and extends from the Dadeland South Metrorail Station to SW 344<sup>th</sup> Street. Both express bus routes and local bus routes operate along the Busway. The number of buses operating in the Busway ranges from 10 to 27 per peak hour per direction.



**South Dade Busway**

## BACKGROUND

The South Dade Busway is located along the old Florida East Coast (FEC) Railroad corridor right-of-way. The Florida Department of Transportation (FDOT) acquired the corridor's right-of-way between the Dadeland South Metrorail Station and Florida City from the FEC Railroad in December 1988. Later, the right-of-way ownership was transferred to Miami-Dade County. In February 1997, Phase 1 of the Busway was opened between Dadeland South and SW 112<sup>th</sup> Avenue. The 8.3-mile Phase 1 Busway was constructed at a cost of \$21 million using Federal Highway Administration (FHWA) funds. During Phase 2, the Busway was extended by a further 11.5 miles to Florida City. A five-mile segment of the Phase 2 Busway extending to SW 264<sup>th</sup> Street was opened in April, 2005. The final 6.5-mile segment of Phase 2 opened in December 2008. The construction of Phase 2 is funded through Federal Discretionary and State funds. The total investment for construction of Phase 2 is estimated at \$74 million and includes funding from the Federal Transit Administration (FTA).



## NEED

The U.S. 1 corridor is currently operating well beyond its maximum theoretical capacity in the northern segment of the corridor and is approaching its theoretical capacity in the southern segment. As a result, person-movement capacity improvements are needed. According to the Miami-Dade MPO's 2030 Long Range Transportation Plan, the highest growth in the County between 2000 and 2030 is projected to occur in the South Transportation Planning Area (generally defined as the area south of Kendall Drive). The demographic and transportation data projections for the south county indicate an 83 percent population growth, a 45 percent employment growth, an 88 percent increase in auto ownership, and a 67 percent increase in trips between 2000 and 2030. As population growth in the south county continues to outpace employment, its residents will have to travel out of the area for employment. Such regional travel demand will further deteriorate level of service (LOS) on U.S. 1. As a result, the Miami-Dade MPO's future traffic projections indicate significant growth in the study area. However, no capacity enhancing projects are currently programmed along U.S. 1.

## ALTERNATIVES

The following alternatives were developed for detailed evaluation:

- **Alternative 1. Two-lane at-grade alternative.** Allow private vehicles to utilize the existing South Dade Busway for a toll, with improvements made to signalization and signage.
- **Alternative 2. Grade separation of managed lanes at the locations identified in the Locally Preferred Alternative for the South Link Study.** Seven grade separation structures were recommended across a total of ten cross-streets in the South Link Study. The remainder of the Alternative 2 managed lanes corridor would be at-grade. Three typical cross sections were identified:
  - Alternative 2A. Three-lane cross section with reversible center lane to provide two lanes in the peak direction during the peak period.
  - Alternative 2B. Four-lane cross section with two lanes each direction.
  - Alternative 2C. Two-lane cross section (hybrid between Alternative 1 and 2).
- **Alternative 3. Four-lane fully elevated cross section of managed lanes with two lanes in each direction and no at-grade intersections.**

## ANALYSIS SUMMARY

Private vehicle access to managed lanes is limited to the termini and two intermediate access points recommended at SW 152<sup>nd</sup> Street and SW 117<sup>th</sup> Avenue. The southern terminus of the managed lanes was recommended at SW 304<sup>th</sup> Street to better capture demand from Homestead and Florida City. Therefore, the length of the managed lane facility between SW 304<sup>th</sup> Street and Dadeland South is 16.7 miles. Additional bus-only access locations may be provided as needed. The managed lanes analysis was based on the following criteria:

- Maintain satisfactory travel conditions for buses operating on the Busway/managed lanes.
- Maintain level of service C for the managed lane users.

It is assumed that all private vehicles will have to pay a toll, whereas buses will be allowed to use the facility for free. A summary of the analysis is presented in the table below. Please note that assistance was received from Miami-Dade Expressway Authority (MDX) staff and consultants in preparing the revenue forecasting and cost estimations.

### SUMMARY OF ALTERNATIVES ANALYSIS

	Alternative 1	Alternative 2A	Alternative 2B	Alternative 2C	Alternative 3
Average Daily Traffic	4,900	12,500	12,500	6,130	24,100
Peak hour, peak-direction capacity	900	1,800	1,800	900	2,940
Construction Cost (2008 \$)	\$23 million	\$496 million	\$531 million	\$186 million	\$1,537 million
Annual Revenue (2030 \$)	\$11.2 million	\$21.8 million	\$21.8 million	\$14.0 million	\$37.2 million
Annualized Const. Cost (assuming 30-year term)	\$1.4 million	\$30.3 million	\$32.5 million	\$12.0 million	\$93.4 million
Annual Operational Cost (2008 \$)	\$0.82 million	\$1.5 million	\$1.5 million	\$0.97 million	\$2.3 million
Peak direction toll per mile (2030 \$)	\$0.75	\$0.60	\$0.60	\$0.75	\$0.75
Estimated (2030) daily volume on US 1 <sup>1</sup>	143,000	137,200	137,200	141,800	133,000

<sup>1</sup> US 1 volume between Dadeland South and SW 152nd Street

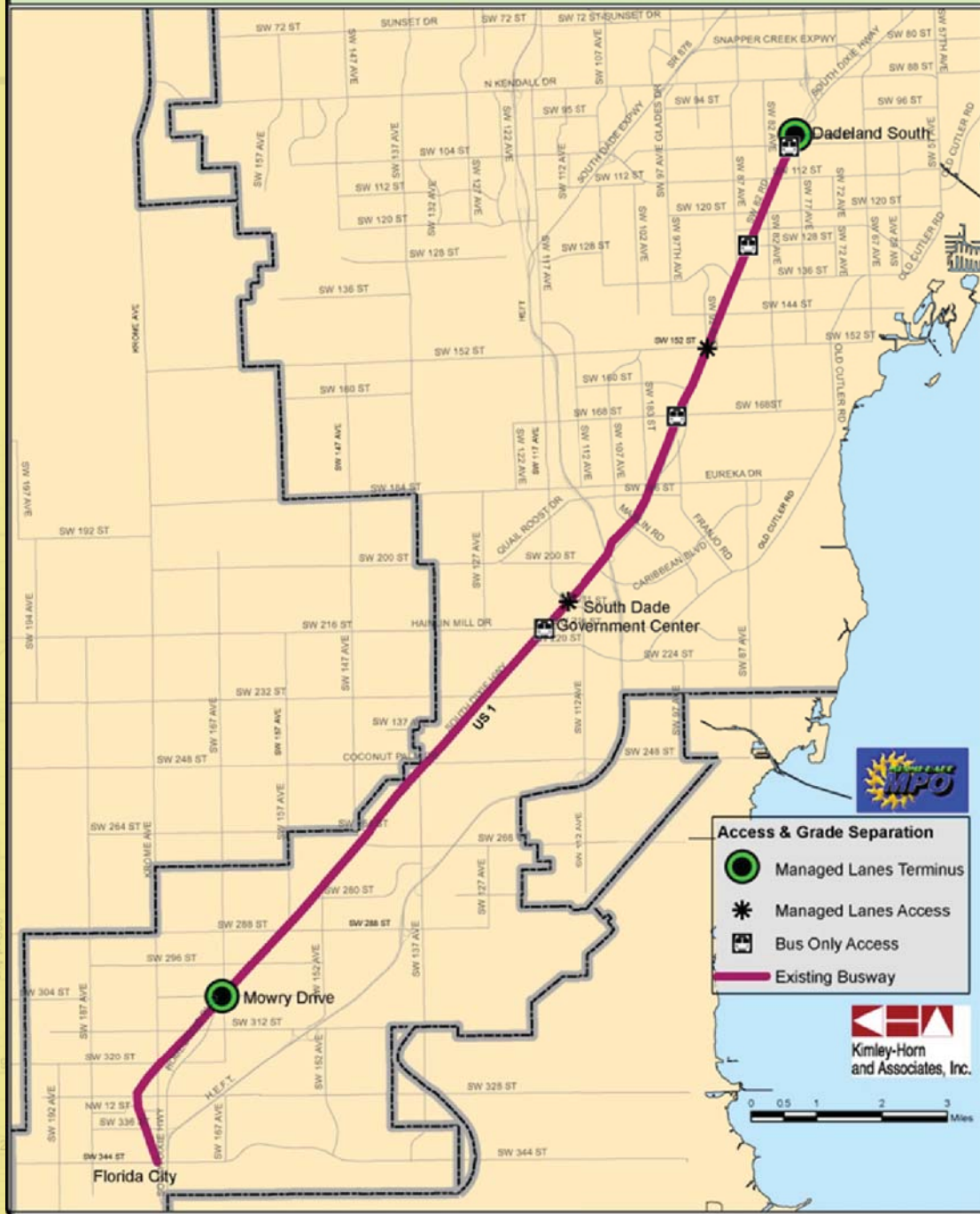
The results indicate that the two-lane cross sections have a greater chance for cost recovery within a typical 30-year term. However, the two-lane alternatives will have less mobility benefits for transit vehicles and show minimal reduction in estimated daily volume on U.S. 1 compared to the no-build volume of 143,500 vehicles per day. The three-lane or four-lane alternatives provide greater revenue but would need to be supplemented by alternative funding sources. Alternative 3 provides significantly greater overall mobility benefits since the fully elevated alternative would remove at-grade intersections along the managed lanes.

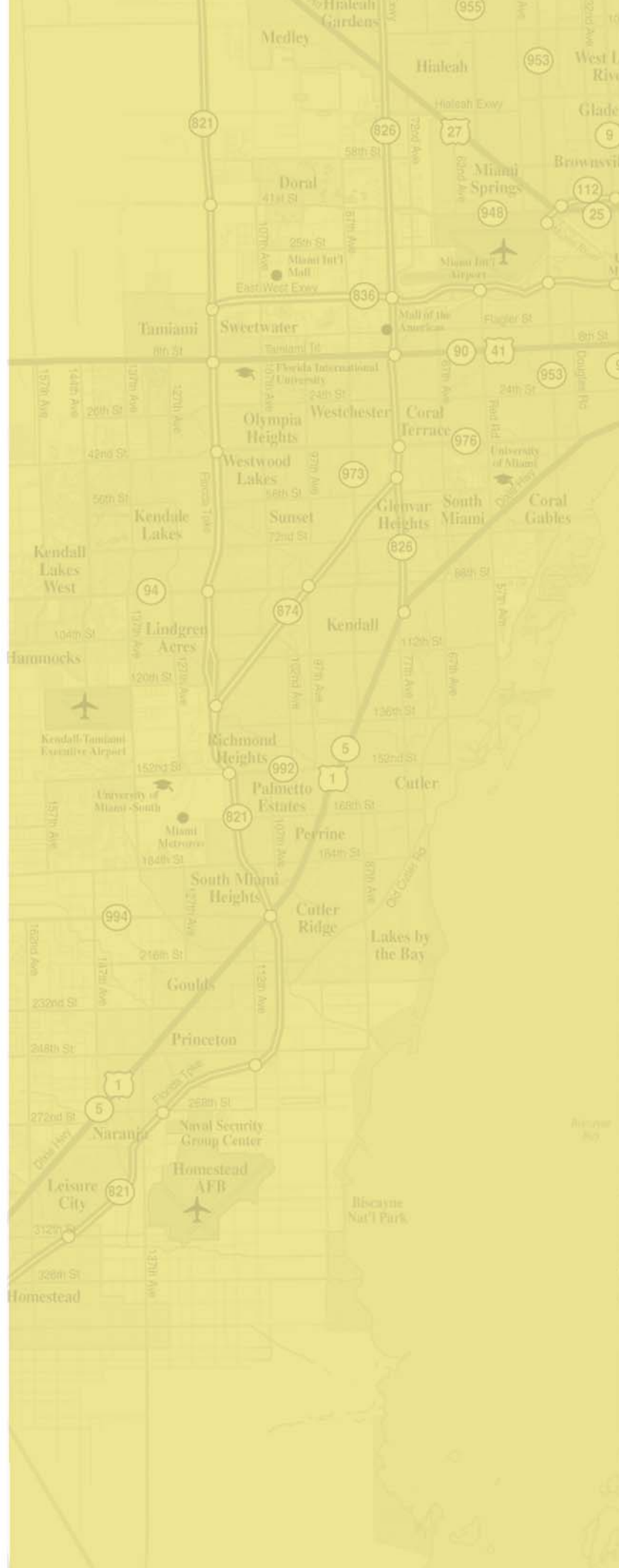
## **POLICY DECISIONS**

The analysis identified options for operating managed lanes within the right-of-way of the South Dade Busway. However, the advancement of managed lanes concept hinges upon the following key policy decisions:

- **Funding mechanism** – As the analysis indicated, the implementation of managed lanes requires a significant investment, except in the case of the minimal-build Alternative 1. Therefore, potential funding sources need to be identified, including the possibility of MDX funding the project, public-private partnerships, and bonding.
- **Percent of revenue reserved for transit improvement** – A key impetus for investigating the feasibility of implementing managed lanes is to determine if managed lanes could generate sufficient revenue to partially fund transit operations and enhancements in the corridor. While preliminary analysis indicates a relatively long term return of investment period, a policy decision could be taken to allocate a portion of the revenue for transit improvements.
- **Envelope for Metrorail extension** – The Locally Preferred Alternative of the South Link study calls for long-term extension of Metrorail to Florida City as demand warrants. Therefore, consideration should be given to plan the construction of managed lanes in such a way to accommodate future Metrorail service within the corridor. Another key policy decision would be to determine whether to continue/discontinue/ or scale back the operation of managed lanes if Metrorail is extended.

## Features of Managed Lanes Alternatives





Kimley-Horn  
and Associates, Inc.